



THE UNIVERSITY *of* EDINBURGH

Edinburgh Research Explorer

Linguistic structures in true, plausible false and false autobiographical memories

Citation for published version:

Cariola, LA 2009, 'Linguistic structures in true, plausible false and false autobiographical memories'.

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Early version, also known as pre-print

General rights

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact openaccess@ed.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.



“Linguistic structures in true, probable false and false memories”

Laura A. Cariola

First supervisor: Prof. Martin Conway

Second supervisor: Dr. Daryl O'Connor

**University of Leeds
Institute of Psychological Sciences**

Background - Methods in lie detection

1) Reality-monitoring model (RM)

2) Criteria-based content analysis (CBCA) - 18 linguistic criteria

3) Scientific content analysis (SCAN) - comparing written with spoken statement & 3 linguistic criteria

4) Investigative discourse analysis (IDA) - 6 linguistic criteria

Critic - Porter & Yuille (1996) - only 3 from of 18 CBCA criteria valid:
1) amount of detail, 2) coherence rating, 3) admitting lack of memory.

Memory and Law Committee Working Party of the BPS Research Board (2008) - lack of reliable methods in accuracy judgment of eyewitness testimonies.

- Re
- Cr
- Sc
- In
- Cr
- Po

Empirical evidence

Research on computerized content analyses of spoken and written data

- Cognitive load
- High self-monitoring
- Underlying feelings of guilt and irritation
- Reduced self-focus, dissociation from statement ownership
- Increased other-focus

Deception in electronic communication

- Planning and editing
- To provide a persuasive and credible statement trying to deceive the listener

Aim of this study

Assessing the latent linguistic structure and features

Sample size - NHST in quantitative communication research

- A-priory power analysis for medium effect size - 363 samples
- 917 samples, from which there are 316 true memories, 303 probable false and 297 false memories.

Multivariate analysis - offering greater construct validity due to language being encoded and decoded as combination of interrelated language features as compared to univariate analysis

Results

Factor analysis explored the underlying linguistic structure grouping similar linguistic variables

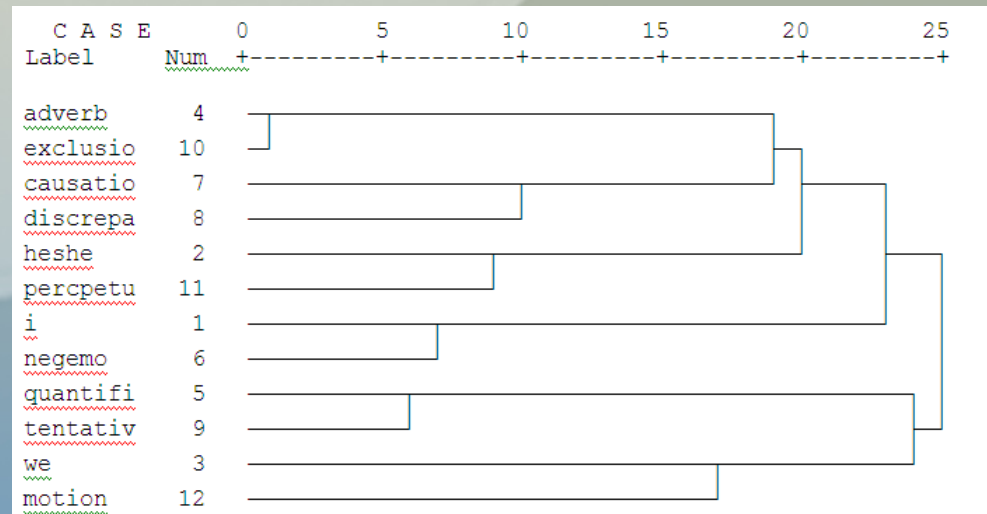
- 1) Self-references
- 2) Other-references
- 3) Cognitive processes
- 4) Qualifiers

Hierarchical cluster analysis classified linguistic groups that form a distinctive fundamental linguistic structure.

- Dendograms with main-clusters and sub-clusters

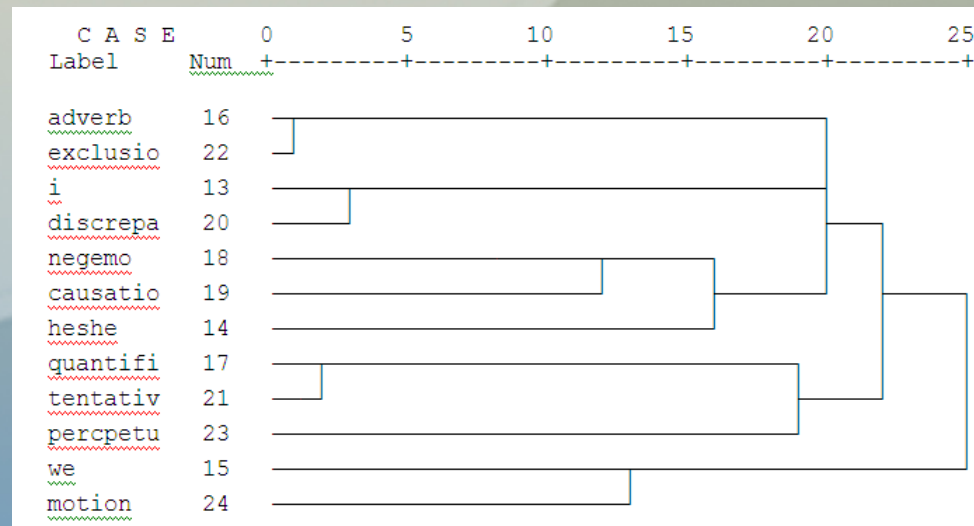
True memories

	<i>Factor loading</i>			
	Factor 1	Factor 2	Factor 3	Factor 4
Linguistic function	Cognitive processes	Self-references	Qualifiers	Other-references
Linguistic variable				
<i>I</i>		-.727		
<i>he/she</i>				.468
<i>we</i>		.782		
<i>adverb</i>	.469			
<i>quantifiers</i>			.798	
<i>negative emotion</i>		-.527		
<i>causation</i>	.416			
<i>discrepancy</i>	.678			
<i>tentativeness</i>			.613	
<i>exclusion</i>	.640			
<i>perceptual proc. motion</i>				.655 -.533
% of variance	15.146	13.871	10.048	9.268
Cumulative %	15.146	29.017	39.065	48.333



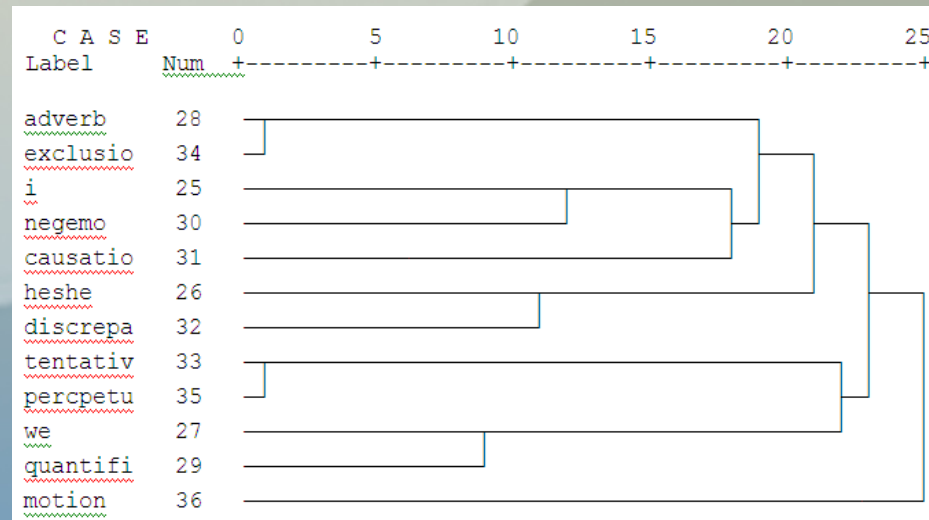
Probable false memories

	<i>Factor loading</i>			
	Factor 1	Factor 2	Factor 3	Factor 4
Linguistic function	Self-references	Cognitive processes	Qualifiers	Other-references
Linguistic variable				
<i>I</i>	.805			
<i>he/she</i>				.549
<i>we</i>	-.799			
<i>adverb</i>		.711		
<i>quantifiers</i>			.604	
<i>negative emotion</i>				.557
<i>causation</i>				.636
<i>discrepancy</i>		.458		
<i>tentativeness</i>			.571	
<i>exclusion</i>		.747		
<i>perceptual proc.</i>			.519	
<i>motion</i>			-.576	
% of variance	14.434	13.072	9.889	9.345
Cumulative %	14.434	27.506	37.395	46.740



False memories

	<i>Factor loading</i>			
	Factor 1	Factor 2	Factor 3	Factor 4
Linguistic function	Self-references	Cognitive processes	Qualifiers	Other-references
Linguistic variable				
<i>I</i>	-.792			
<i>he/she</i>			-.318	.748
<i>we</i>	.826			
<i>adverb</i>		.720		
<i>quantifiers</i>	.484			
<i>negative</i>				
<i>emotion</i>		.566		
<i>causation</i>		.309		
<i>discrepancy</i>				.585
<i>tentativeness</i>			.726	
<i>exclusion</i>		.658		
<i>perceptual proc.</i>			.792	
<i>motion</i>				-.614
% of variance	16.186	13.541	10.469	9.561
Cumulative %	16.186	29.700	40.169	49.730





Thank you!